Kantonsspital St.Gallen

Clinical and Imaging Features of COVID-19-Associated Pulmonary Aspergillosis

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BACKGROUND
COVID-19 superinfection by Aspergillus (COVID-19-associated aspergillosis, CAPA) is increasingly observed due to increased awareness and use of corticosteroids. The aim of this study is to compare clinical and imaging features between COVID-19 patients with and without associated pulmonary aspergillosis.

MATERIAL AND METHODS
In this case-control study, hospitalized patients between March 2020 and March 2021 were evaluated. Two observers independently compared 105 chest CTs of 52 COVID-19 patients without pulmonary aspergillosis to 40 chest CTs of 13 CAPA patients. The following features were evaluated: lung involvement, predominant main pattern (ground glass opacity, crazy paving, consolidation) and additional lung and chest findings. Chronological changes in the abnormal extent upon CT and chronological changes in the main patterns were compared with mixed models. Patient-wise comparisons of additional features and demographic and clinical data were performed using Student's t-test, Chi-squared test, Fisher's exact tests and Wilcoxon rank-sum tests.

RESULTS
Compared to COVID-19 patients without pulmonary aspergillosis, CAPA patients were older (mean age (±SD): 70.3 (±7.8) versus 63.5 (±9.5) years (= 0.01). The time-dependent evolution rates for consolidation (= 0.02) and ground glass (= 0.006) differed. In early COVID-19 disease, consolidation was associated with CAPA, whereas ground glass was less common. Chronological changes in the abnormal extent upon CT did not differ (= 0.29). Regardless of the time point, bronchial wall thickening was observed more frequently in CAPA patients (= 0.03).

CONCLUSIONS
CAPA patients showed a tendency for consolidation in early COVID-19 disease. Bronchial wall thickening and higher patient age were associated with CAPA. The overall lung involvement was similar between both groups.

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